OBLON, SPIVAK, ET AL **DOCKET #: 249958US2SDIV** INV: Koji MARUYAMA et al. SHEET 1 OF 25

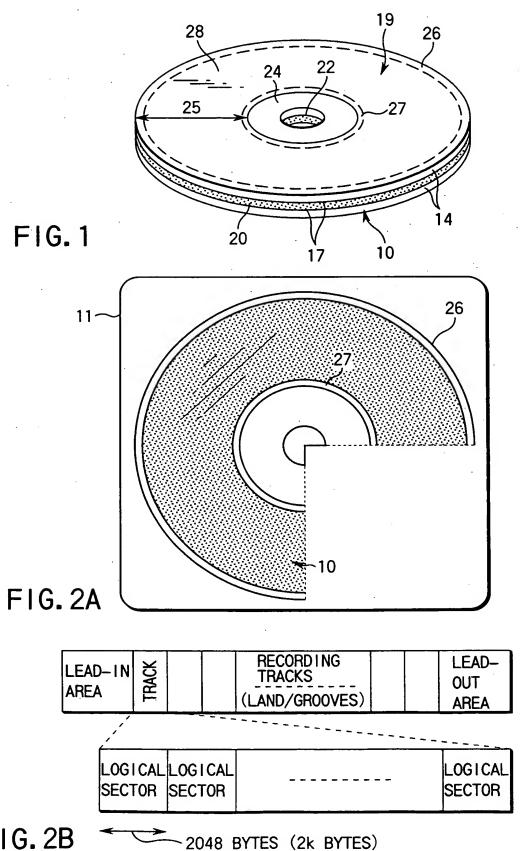


FIG. 2B

OBLON, SPIVAK, ET AL DOCKET #: 249958US2SDIV INV: Koji MARUYAMA et al. SHEET 2_OF_25_

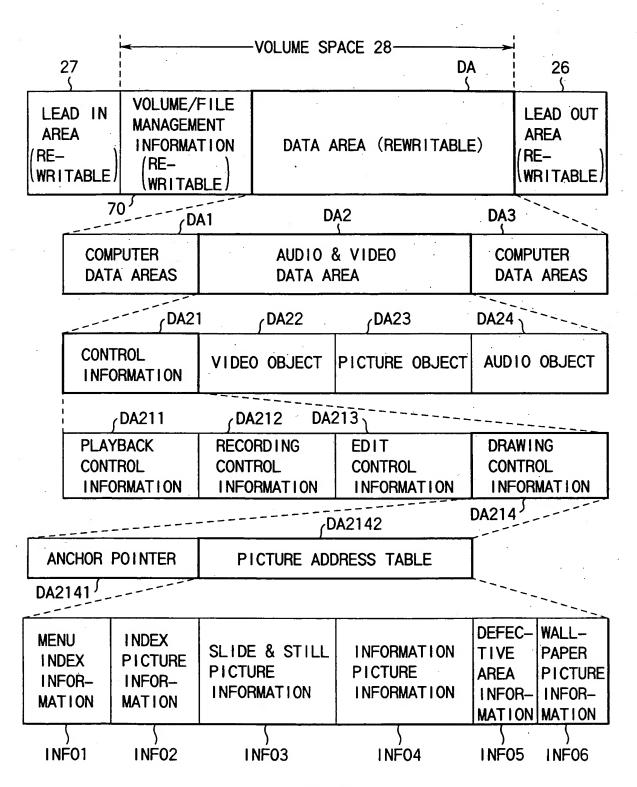
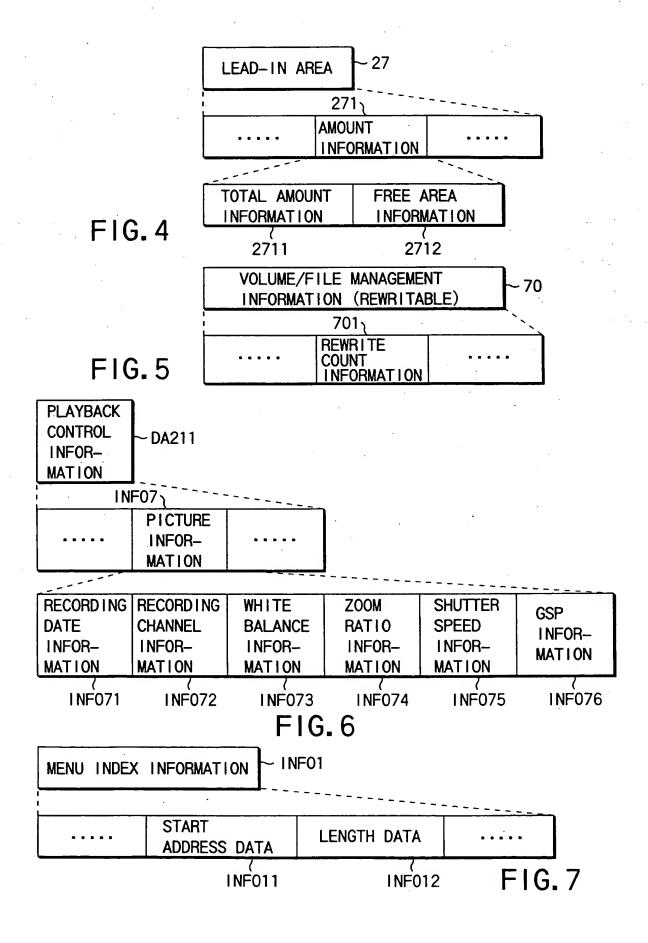
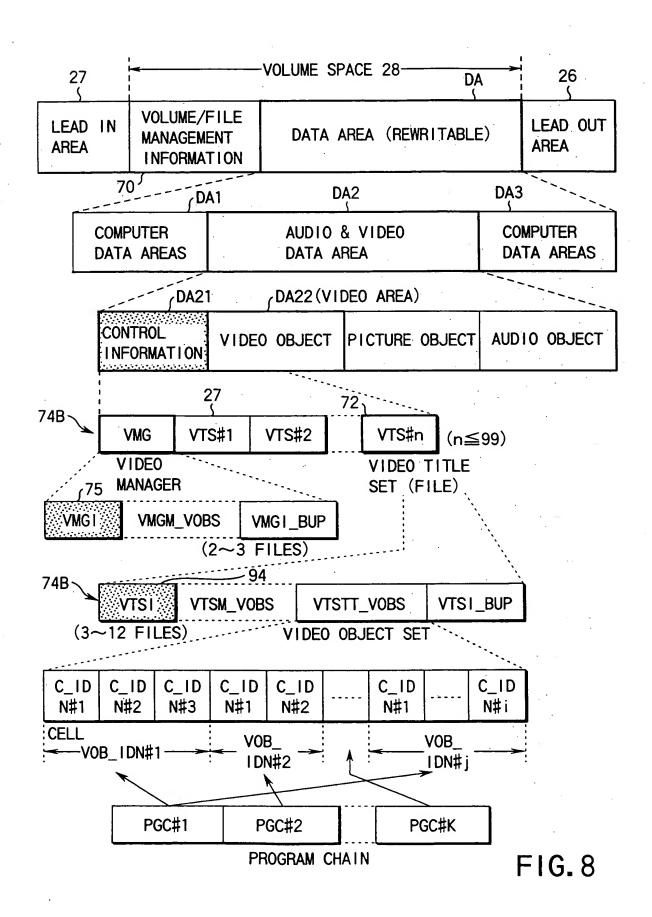


FIG. 3

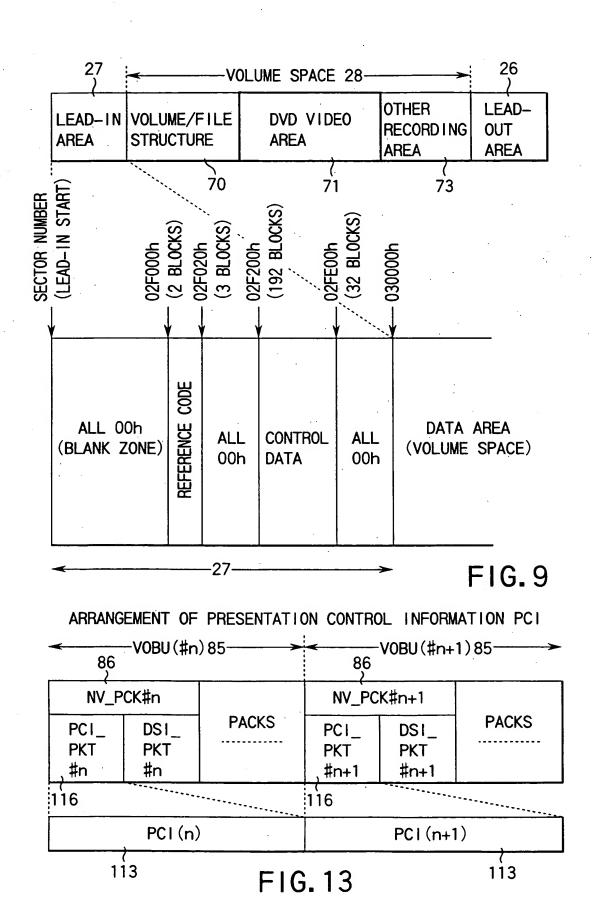
OBLON, SPIVAK, ET AL DOCKET #: 249958US2SDIV INV: Koji MARUYAMA et al. SHEET 3_OF_25_



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OBLON, SPIVAK, ET AL DOCKET #: 249958US2SDIV INV: Koji MARUYAMA et al. SHEET <u>6</u> OF <u>25</u>

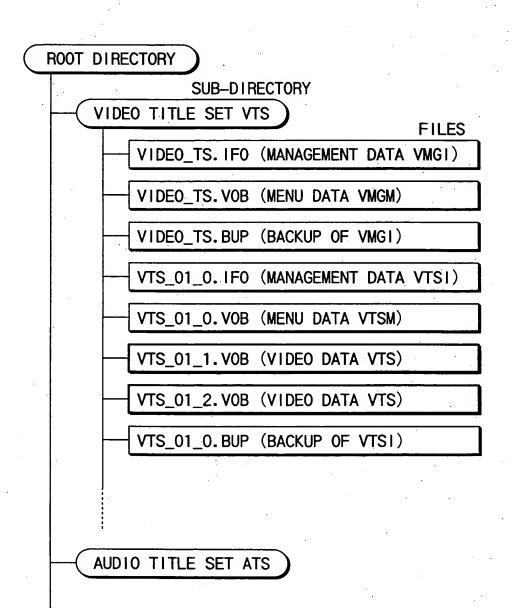
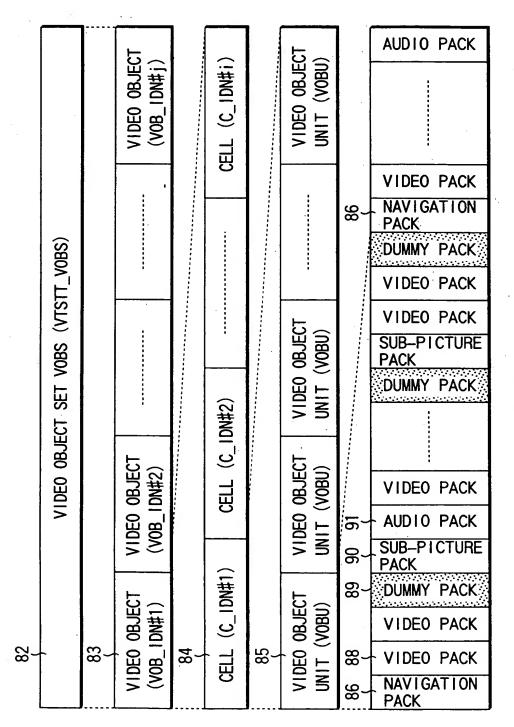
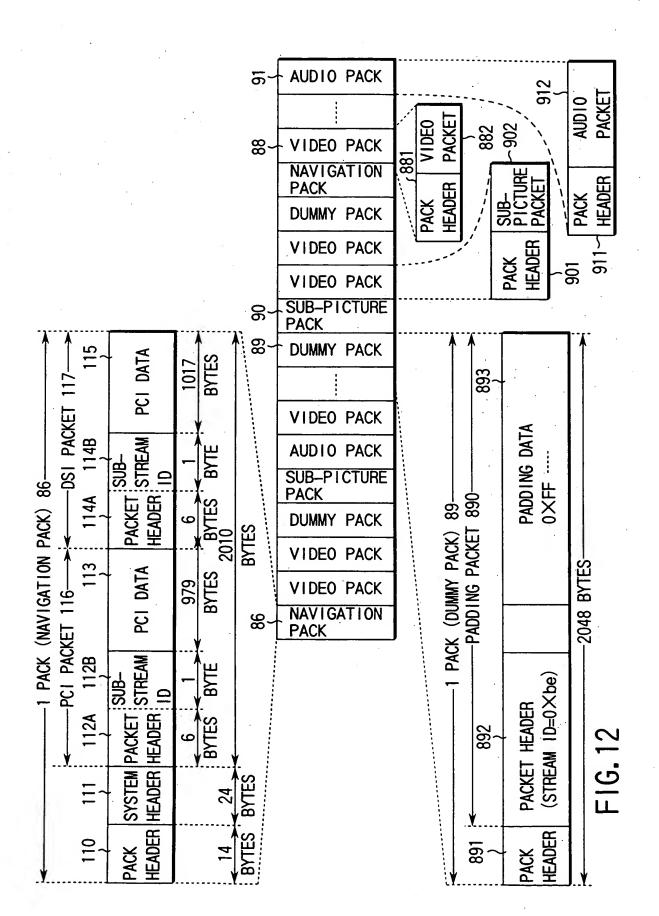


FIG. 10



F16.11

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VIDEO MANAGER VMG VMGI MANAGEMENT TABLE (FILE 74A) VMGI_MAT (MANDATORY) VIDEO MANAGER TITLE SEARCH POINTER - 75 INFORMATION VMGI TABLE TT_SRPT (MANDATORY) (MANDATORY) VIDEO OBJECT SET VIDEO MANAGER MENU PGCI FOR VIDEO MANAGER UNIT TABLE VMGM_PGCI_UT MENU VMGM VOBS (MANDATORY WHEN (OPTIONAL) VMGM_VOBS EXISTS) BACKUP OF VIDEO PARENTAL MANAGEMENT MANAGER INFORMATION INFORMATION TABLE VMGI_BUP (MANDATORY) PTL_MAIT (OPTIONAL) VIDEO TITLE SET ATTRIBUTE TABLE VTS_ATRT (MANDATORY) TEXT DATA MANAGER TXTDT_MG (OPTIONAL) VIDEO MANAGER MENU CELL ADDRESS TABLE VMGM C ADT (MANDATORY WHEN VMGM_VOBS EXISTS) VIDEO MANAGER MENU VIDEO OBJECT UNIT ADDRESS MAP VMGM_VOBU_ADMAP (MANDATORY WHEN VMGM_VOBS EXISTS)

FIG. 14

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VIDEO MANAGER INFORMATION MANAGEMENT TABLE VMGI_MAT

* * * * * * * * * * * * * * * * * * * *	DEO IDANACEN INI ONINA	TITUN MANAGEMENT TABLE VMGT_MAT	·
RBP	SYMBOL	CONTENTS	NUMBER OF BYTES
0–11	VMG_ID	VMG IDENTIFIER	12
12–15	VMG_EA	END ADDRESS OF VMG	4
16-27	RESERVED	RESERVED	12
28-31	VMGI_EA	END ADDRESS OF VMG1	4
32-33	VERN	VERSION OF DVD SPEC.	2
34-37	VMG_CAT	VIDEO MANAGER CATEGORY	4
38-45	VLMS_ID	VOLUME SET IDENTIFIER	8
46-49	FREE_SPACE	FREE SPACE/FREE AREA	14
50-61	RESERVED	RESERVED	12
62-63	VTS_Ns	NUMBER OF VTS	2
64-95	PVR_ID	PROVIDER UNIQUE ID	32
96-127	RESERVED	RESERVED	32
128-131	VMGI_MAT_EA	VMGI_MAT END ADDRESS	4
132-135	FP_PGCI_SA	FP_PGCI_START_ADDRESS	4
136-191	RESERVED	RESERVED	56
192-195	VMGM_VOBS_SA	VMGM_VOBS START ADDRESS	4
196–199	TT_SRPT_SA	TT_SRPT_START_ADDRESS	4
200–203	VMGM_PGCI_UT_SA	VMGM_PGCI_UT START ADDRESS	4
204-207	PTL_MAIT_SA	PTL_MAIT START ADDRESS	4
208-211	VTS_ATRT_SA	VTS_ATRT_START_ADDRESS	4
212-215	TXTDT_MG_SA	TXTDT MG START ADDRESS	4
216–219	VMGM_C_ADT_SA	VMGM_C_ADT_START_ADDRESS	4
220-223	VMGM_VOBU_ADMAP_SA		4
224-255	RESERVED	RESERVED	32
256-257	VMGM_V_ATR	VIDEO ATTRIBUTE OF VMGM	2
258-259	VMGM_AST_Ns	NUMBER OF AUDIO STREAMS OF VMGM	32 2 2
260-267	VMGM_AST-ATR	AUDIO STREAM ATTRIBUTE OF VMGM	8
268-323	RESERVED	RESERVED	56
324-339	RESERVED	RESERVED	16
340-341	VMGM_SPST_Ns NUM	BER OF SUB-PICTURE STREAMS OF VI	AGM 2
342-347	VMGM_SPST_ATR SUE	B-PICTURE STREAM ATTRIBUTE OF VM	GM 6
348-1023	RESERVED	RESERVED	676
1024-			0 OR
2291	FP_PGC1	FIRST PLAY PGCI	236-
(MAX)			268
	<u> </u>		

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VIDEO TITLE SET INFORMATION VTSI

VIDEO TITLE SET VTS 72 (FILE 74B)

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VIDEO TITLE SET INFORMATION VTSI (MANDATORY) VIDEO OBJECT SET FOR VIDEO TITLE SET MENU VTSM_VOBS (OPTIONAL) VIDEO OBJECT SET FOR VIDEO TITLE SET TITLE VTSTT_V0BS (OPTIONAL) BACKUP OF VIDEO TITLE SET INFORMATION VTSI BUP

(MANDATORY)

VIDEO TITLE SET INFORMATION MANAGEMENT TABLE VTSI_MAT (MANDATORY) VIDEO TITLE SET PART_OF TITLE SEARCH POINTER TABLE VTS_PTT_SRPT (MANDATORY) VIDEO TITLE SET PROGRAM CHAIN INFORMATION TABLE VTS_PGCIT (MANDATORY) VIDEO TITLE SET MENU PGCI UNIT TABLE VTSM PGCI UT (MANDATORY WHEN VTSM VOBS EXISTS)

(OPTIONAL)
VIDEO TITLE SET MENU
CELL ADDRESS TABLE
VTSM_C_ADT
(MANDATORY WHEN
VTSM_VOBS_EXISTS)

VIDEO TITLE SET TIME

MAP TABLE VTS_TMAPT

VIDEO TITLE SET MENU
VIDEO OBJECT UNIT
ADDRESS MAP
VTSM_VOBU_ADMAP
(MANDATORY WHEN
VTSM_VOBS EXISTS)

VIDEO TITLE SET CELL ADDRESS TABLE VTS C ADT (MANDATORY

VTS_C_ADT (MANDATORY)

VIDEO TITLE SET VIDEO
OBJECT UNIT ADDRESS MAP
VTS_VOBU_ADMAP
(MANDATORY)

VIDEO TITLE SET
PGCI TABLE
INFORMATION
VTS_PGCITI
VTS_PGCI SEARCH
POINTER #1
VTS_PGCI_SRP#1

VTS_PGCI SEARCH
POINTER #n
VTS_PGCI_SRP#n
VIDEO TITLE SET
PROGRAM CHAIN
INFORMATION
VTS_PGCI

VIDEO TITLE SET PROGRAM CHAIN INFORMATION VTS_PGCI

*NOTE>MANDATORY
WHEN VTSM_VOBS
EXISTS

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VIDEO TITLE SET INFORMATION MANAGEMENT TABLE VTSI_MAT

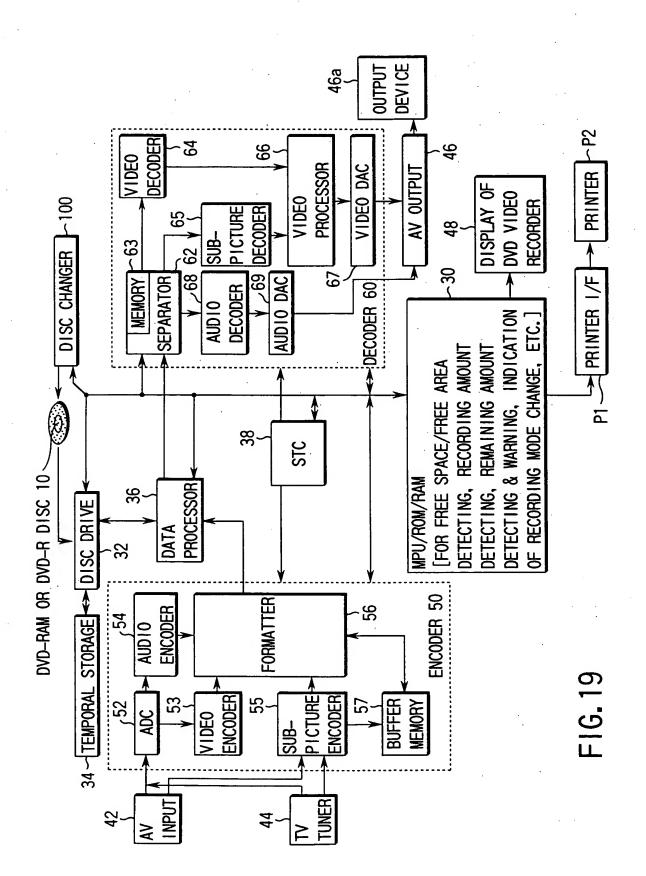
	EO TITLE OLI INI OTII	MATION MANAGEMENT TABLE VISI_MAT						
RBP	SYMBOL	CONTENTS	NUMBER OF BYTES					
0-11	VTS_ID	VTS IDENTIFIER	12					
12–15	VTS_EA	END ADDRESS OF VTS	4					
16	PLAY_END Flag	0=NOT YET PLAYED BACK; 1=COMPLETELY PLAYED BACK	1					
17	ARCHIVE Flag	0=FREE (ERASABLE); 1=KEEP (UNERASABLE)	1					
18–27	RESERVED	RESERVED	10					
28-31	VTSI_EA	END ADDRESS OF VTSI	4					
32-33	VERN	VERSION OF DVD SPEC.	4 2					
34-37	VTS_CAT	VTS CATEGORY	4					
38-127	RESERVED	RESERVED	90					
128-131	VTSI_MAT_EA	END ADDRESS OF VTSI MAT	4					
132-191	RESERVED	RESERVED	60					
192-195	VTSM_VOBS_SA	START ADDRESS OF VTSM_VOBS	4					
196-199	VTSTT_V0BS_SA	START ADDRESS OF VTSTT_VOBS	4					
200-203	VTS_PTT_SRPT_SA	START ADDRESS OF VTS_PTT_SRPT	4					
204-207	VTS_PGCIT_SA	START ADDRESS OF VTS PGCIT	4					
208-211	VTSM_PGCI_UT_SA	START ADDRESS OF VTSM_PGCI_UT	4					
212-215	VTS_TMAPT_SA	START ADDRESS OF VTS TMAPT	4					
216-219	VTSM_C_ADT_SA	START ADDRESS OF VTSM C ADT	. 4					
220-223	VTSM_VOBU_ADMAP_SA	START ADDRESS OF VTSM_VOBU_ADMAP						
224-227	VTS_C_ADT_SA	START ADDRESS OF VTS_C_ADT	4					
228-231	VTS_VOBU_ADMAP_SA		4					
232-255	RESERVED	RESERVED	24					
256–579	RESERVED RESERVED ATTRIBUTES OF VIDEO, AUDIO, SUP-PICTURE, ETC.							
580-595	RESERVED	RESERVED	16					
596–597	VTS_SPST_Ns	NUMBER OF SUB-PICTURE STREAMS OF VTS	2					
598–789	VTS_SPST_ATRT	SUB-PICTURE STREAM ATTRIBUTE TABLE OF VTS	192					
790–791	RESERVED	RESERVED	2					
792–983	VTS_MU_AST_ATRT	MULTICHANNEL AUDIO STREAM ATTRIBUTE TABLE OF VTS	192					
984-2047	RESERVED	RESERVED	1064					

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PROGRAM CHAIN GENERAL INFORMATION PGC_GI

RBP	SYMBOL	CONTENTS	NUMBER OF BYTES
0–3	PGC_CNT	PGC CONTENTS	4
4–7	PGC_PB_TM	PGC PLAYBACK TIME	4
8–11	PGC_UOP_CTL	PGC USER OPERATION CONTROL	4
12–27	PGC_AST_CTLT	PGC AUDIO STREAM CONTROL TABLE	16
28–155	PGC_SPST_CTLT	PGC SUB-PICTURE STREAM CONTROL TABLE	128
156–163	PGC_NV_CTL	PGC NAVIGATION CONTROL	8
164-227	PGC_SP_PLT	PGC SUB-PICTURE PALETTE	4×16
228–229	PGC_CMDT_SA	START ADDRESS OF PGC_CMDT	2
230–231	PGC_PGMAP_SA	START ADDRESS OF PGC_PGMAP	2
232–233	C_PBIT_SA	START ADDRESS OF C_PBIT	2
234–235	C_POSIT_SA	START ADDRESS OF C_POSIT	2

TOTAL 236 BYTES



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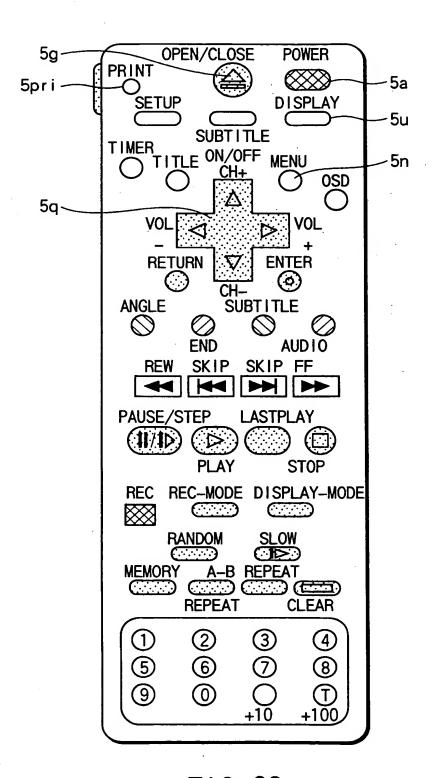
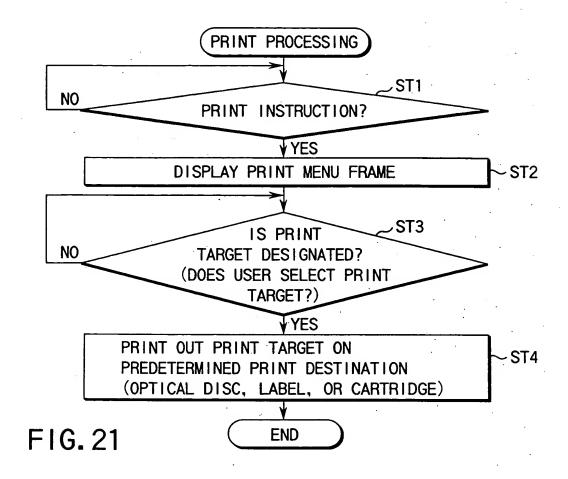
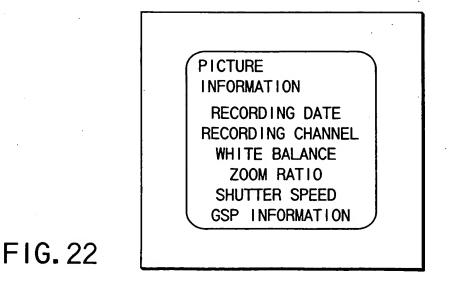


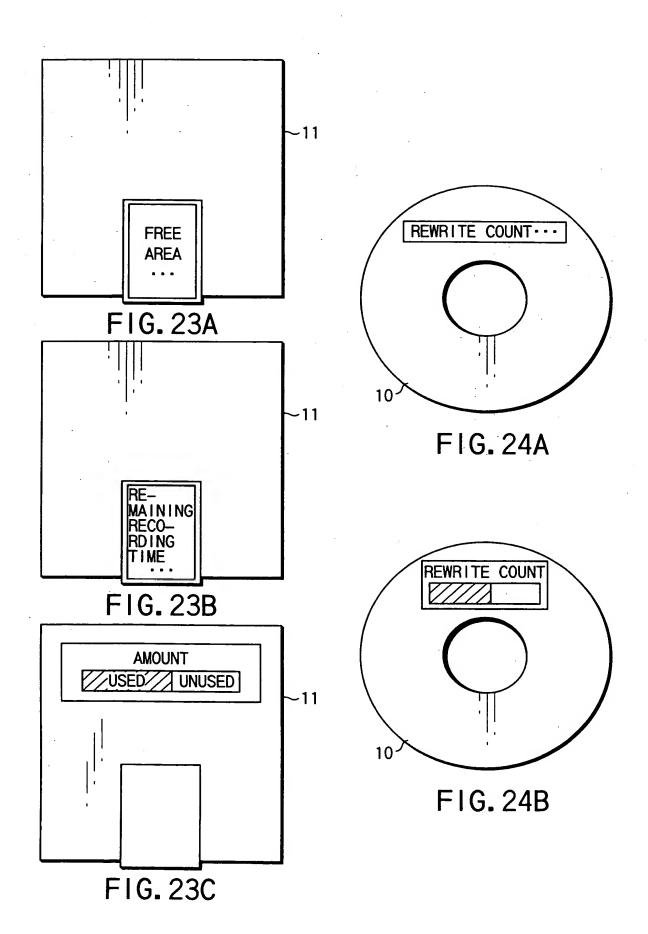
FIG. 20

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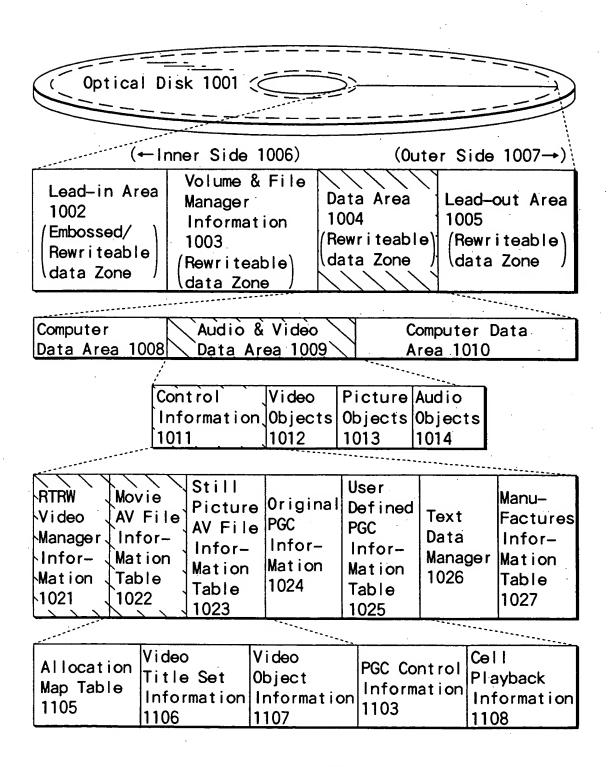
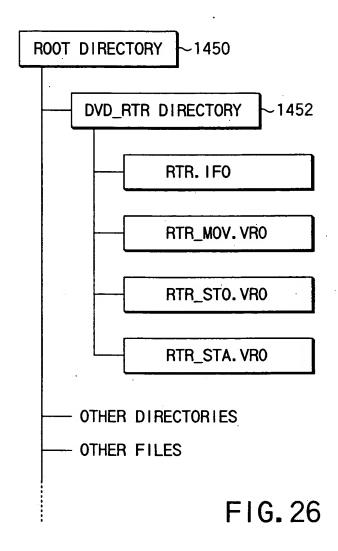


FIG. 25

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	AV FILE 1401																		
	VOB #3 VOB #1 1463 1461			VOB #3 1464			VUD #2			UN- RECORDED AREA 1460			VOB #3 1465						
EX	EXTENT #γ 1473		γ	EXTENT #α 1471			EXTENT #δ 1474			EXTENT # /3 1472			EXTENT # ζ 1470			EXTENT #ε 1475			
LSN a+1	LSN a+2	•••		LSN b+1		•••		LSN c+1	•••	1	LSN d+1	•••		LSN e+1	•••		LSN f+1	•••	LSN g

← LSN (LOGICAL SECTOR NUMBER) SMALL
(TOWARD INNER SIDE ON
OPTICAL DISK 1001)

LSN LARGE ->
(TOWARD OUTER SIDE
ON OPTICAL DISK 1001)

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			AV Fi	le	1401			·		- 	-	
1402)2	1		
		Prog	ram Set	(0	rigina	al	PG	C)	·			
1407										408	3	
		PG (Pro	gram)				• •	PC	3	(Progr	am)	
					-	1						1
Or	iginal C	ell=V0B 140		0b	ject)		• •.	V0B 1404		V0B 1405		
 						-				 		
VO		o Objec 1411	t Unit)		VOBU	1		VOBI 1413		VOBU 1414		••
·						· [] 		† . ‡ 		
V_PCK (Video) (Pack)	SP_PCK /Sub- Picture /Pack 1422	A_PCK (Audio) (Pack)	DM_PCK (Dummy) Pack)	••	V_ PCK	• •	••	V_ PCK 1426	•	V_ PCK	••	•
		20			1425			1420		1427		
Sector (2048B) 1431	Sector (2048B) 1432	Sector (2048b) 1433	Sector (2048b) 1434	••	Sec- tor 1435	• •	• •	Sec- tor 1436	•	Sec- tor 1437	••	••
					14	41	<u> </u>	1442	2 .	1443	i 	
C	œll (Use	r Defin	ed Cell)=								
		2 27	·		(Us	ər		PGC fined	P	GC)	-14	146

FIG. 27

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_	6 –а		f-e	-		b-a	c-p	1		d-a	6-d	ຕ.		-	p-a		c-a	ပ		f-a	g-f
1601	AREA 1606		1614	1602	*	1607	1615	1603	T	1608	1616	1604		1609	1617	· · · · · · · ·	1610	1618		1611	1619
NUMBER OF EXTENTS IN UNRECORDED AREA	START ADDRESS OF FIRST EXTENT IN UNRECORDED AREA (LOGICAL SECTOR NUMBER)	SIZE OF FIRST EXTENT IN UNRECORDED AREA	(SECTOR NUMBER)	NUMBER OF EXTENTS INCLUDED IN VOB#1	START ADDRESS OF FIRST EXTENT IN VOB#1	(LOGICAL SECTOR NUMBER)	SIZE OF FIRST EXTENT IN VOB#1	NUMBER OF EXTENTS INCLUDED IN VOB#2	START ADDRESS OF FIRST EXTENT IN VOB#2	(LOGICAL SECTOR NUMBER)	SIZE OF FIRST EXTENT IN VOB#2	NUMBER OF EXTENTS INCLUDED IN VOB#3	START ADDRESS OF FIRST EXTENT IN VOB#3	(LOGICAL SECTOR NUMBER)	SIZE OF FIRST EXTENT IN VOB#3	START ADDRESS OF SECOND EXTENT IN VOB#3	(LOGICAL SECTOR NUMBER)	SIZE OF SECOND EXTENT IN VOB#3	START ADDRESS OF THLRD EXTENT IN VOB#3	(LOGICAL SECTOR NUMBER)	SIZE OF THIRD EXTENT IN VOB#3
		Y)		UNRECORDED AREA POSITION		INFORMATION AROUT VOR#1	1622	DATA RECORDING POSITION DISTRIBUTION	INFORMATION ABOUT VOB#2		DATA RECORDING POSITION DISTRIBUTIONS	1624					*				FIG. 29

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RTRW Video (RTRW_VMGI)	Manager Info	Video Manager Informat Management Table (VMGI Play List Pointer Tabl (PL_LPT)	_MAT)								
	\(\(\tau_{-\text{L}}\)\(\text{\text{\$\sigma}}\)										
RBP	Field Name	/	Number of bytes								
0 to 11	VMG_ID	VMG Identifier	12 bytes								
12 to 15	RTR_VMG_EA	End address of RTR_VMG	4 bytes								
16 to 27	reserved	reserved	12 bytes								
28 to 31	VMGI_EA	End address of VMGI	4 bytes								
32 to 33	VERN	Version number of DVD Specifications for Video Recording	2 bytes								
34 to 127	reserved	reserved	94bytes								
128 to 129	TM_ZONE	Time Zone	2 bytes								
130 to 131	STILL_TM	Still Time for Still Pictures	2 bytes								
132 to 133	CHRS	Character Set Code for Primary Text	2 bytes								
134 to 148	RSM_MRK1	Resume Marker Information	15 bytes								
149 to 163	REP_PICTI	Disc Representative Picture Information	15 bytes								
164 to 191		reserved	28 bytes								
192 to 195		Start Address of M_AVFIT	4 bytes								
196 to 199	S_AVFIT_SA	Start Address of S AVFIT	4 bytes								
200 to 207		reserved	8 bytes								
		Start Address of ORG_PGCI	4 bytes								
		Start Address of UD_PGCI	4 bytes								
216 to 219	TXTDT_MG_SA	Start Address of TXTDT_MG	4 bytes								
220 to 223	MNFIT_SA	Start Address of MNFIT	4 bytes								
224 to 511	reserved	reserved	288 bytes								
Total			512 bytes								
		V									
RBP	Field Name	Contents	Number of bytes								
149	PGCN	PGC number	1 byte								
150	PGN	PG number	1 byte								
151 to 152	CN	Cell number	2 bytes								
153 to 158	PICT_PT	Picture Point	6 bytes								
159 to 163	CREAT_TM	Time when this Disc Representative Picture was made	5 bytes								
Total			15 bytes								

FIG. 30

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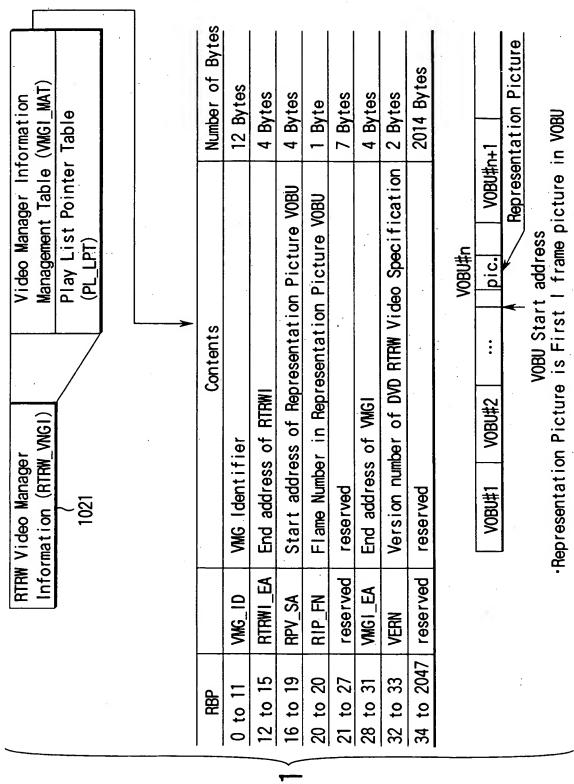
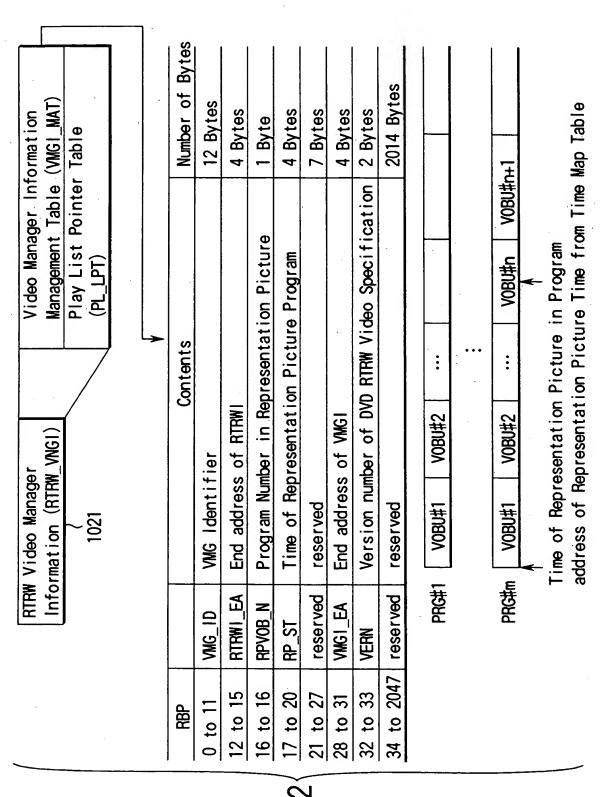


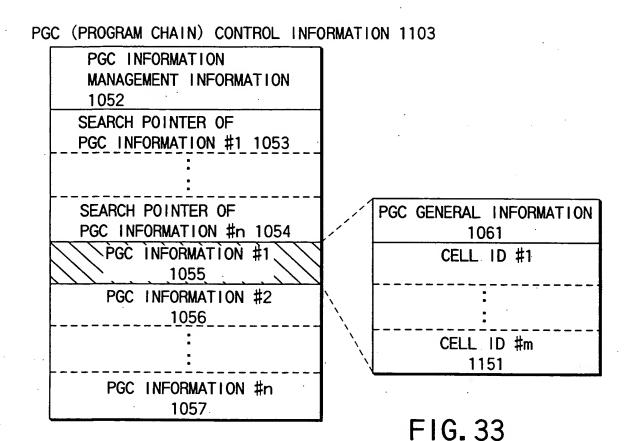
FIG. 31

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F16.3

OBLON, SPIVAK, ET AL DOCKET #: 249958US2SDIV INV: Koji MARUYAMA et al. SHEET <u>25</u> OF <u>25</u>



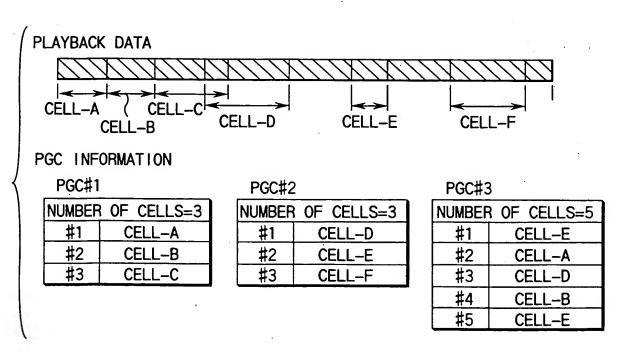


FIG. 34